

**REMARKS**

Claims 1, 3, 8-15, 43, and 46-51 currently appear in this application. The Office Action of July 23, 2004, has been carefully studied. These claims define novel and unobvious subject matter under Sections 102 and 103 of 35 U.S.C., and therefore should be allowed. Applicants respectfully request favorable reconsideration, entry of the present amendment, and formal allowance of the claims.

**New Claims**

Claims 4, 44 and 45 have been cancelled and new claims 47-51 submitted herewith. Entry of these claims and this amendment is respectfully requested, as these new claims further define the enzymes. Claim 48 defines a purified  $\alpha$ -isomaltosylglucosaccharide-forming enzyme. The physicochemical properties recited in claim 48 are those of the enzyme obtained from microorganisms of the genus *Arthrobacter*.

New claims 47 and 50 further define the enzymes with their partial amino acid sequences. Support for new claim 47 can be found in the specification as filed at page 83, second and third paragraphs. Support for claim 50 can be found in the specification as filed at page 114, second paragraph.

Support for claim 51 can be found in the specification as filed at pages 70-71, Table 3 and pages 82-83, Table 7 (It should be noted that recitation. "the activity of  $\alpha$ -isomaltosyl-transferring enzyme" is a typographical error. Please compare the recitation regarding Table 8 at page 85.); pages 98-99, Table 13; page 114, Table 19. It should be noted that the recitation at page 113, last paragraph, "the activity of  $\alpha$ -isomaltosyl-transferring enzyme" is a typographical error; this should read -the activity of  $\alpha$ -isomaltosylglucosaccharide-forming enzyme--. It is clear from the remainder of the specification that these are two typographical errors, and that no new matter is added.

**Rejections under 35 U.S.C. 112**

Claim 1 and claims 2-4, 8-15 and 43-46 depending therefrom are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject which applicant regards as the invention. Claim 1, 4 and 44 recite the phrase "substantially increasing the reducing power," the metes and bounds of which the Examiner alleges are not clear.

This rejection is respectfully traversed. Claim 1 has been amended to more clearly define the invention. Claim 1 has been amended to recite that "substantially increasing the reducing power" has been modified -in a substrate solution-without substantially increasing the reducing power - of the substrate solution--. Support for this can be found in the specification as filed at pages 131-133, Experiment 22, wherein the definition of "percentage of forming reducing power" is defined by an equation. It is therefore believed that one skilled in the art could readily understand the term "substantially increasing the reducing power" based upon the description in the specification and the formula given.

Claims 1, 4 and 44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The Examiner's position is that claims 1, 4, and 44, and claims 2, 8-15, 43 and 45-46 which depend therefrom, contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The Examiner alleges that claims 1, 4, and 44 are drawn to isomaltosylglucosaccharide synthase

polypeptides have properties which do not match the characteristics described in the specification.

This rejection is respectfully traversed. With respect to the physicochemical properties of the enzyme, applicant wishes to point out the fact that the ranges of the physicochemical properties, such as molecular weight and isoelectric point, recited in original claim 4 correspond to the lowest end and the highest end of the physicochemical properties of the enzymes disclosed in the specification. The ranges of physicochemical properties have been amended to those of enzymes obtained from microorganisms of the genus *Bacillus* in amended claim 1, and of the genus *Arthrobacter* in new claim 48.

With regard to the characteristics such as incapable of forming dextran, inhibited by EDTA or stabilized by  $\text{Ca}^{2+}$  or  $\text{Mg}^{2+}$ , the Examiner's attention is drawn to the following description in the specification:

- a. "incapable of forming dextran" can be found on pages 131-133, Experiment 23
- b. "inhibited by EDAT" can be found on pages 69-71, Experiment 5-1, Table 3; pages 81-83, Experiment

8-1, Table 7; pages 97-99, Experiment 12-1, Table 13; and pages 112-114, Experiment 16-1, Table 19.

c. "stabilized or activated by  $\text{Ca}^{2+}$  or  $\text{Mg}^{2+}$ " can be found on pages 69-71, Experiment 5-1, Table 3; pages 81-83, Experiment 8-1, Table 7; pages 97-99, Experiment 12-1, Table 13; and pages 112-114, Experiment 16-1, Table 19.

Claims 1, 3, 8 and 12-15 are rejected under 35 U.S.C. 112, first paragraph, because the specification is said only to be enabling for an isomaltosylglucosaccharide-forming enzyme isolated from *Bacillus* sp. or *Arthrobacter* sp., wherein said enzyme comprises either SEQ ID NO:1, 11 or 18, and wherein the enzyme forms a saccharide having a glucose polymerization degree of at least three with both an  $\alpha$ -1,6-glucosidic linkage and an  $\alpha$ -1,4-glucosidic linkage.

This rejection is respectfully traversed. Claim 1 has been amended to recite the physicochemical properties recited in original claim 4. Since original claim 4 was part of the specification as filed, it is respectfully submitted that this information is not new matter. New claim 48 defines the enzyme in the same manner as original claim 4.

Claims 1, 3, 8 and 12-15 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was

not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

This rejection is respectfully traversed. Claim 1 has been amended to recite the physicochemical properties of the enzyme. The enzyme thus has been defined by relevant, identifying characteristics, *i.e.*, activity and physicochemical properties.

**Information Disclosure Statement**

Submitted herewith is a receipt card bearing the PTO date stamp of July 2, 2002, as evidence of filing an Information Disclosure Statement. The undersigned hereby certifies that the copy of the Information Disclosure Statement re-filed herewith, is a duplicate copy of the Information Disclosure Statement originally filed July 2, 2002. Therefore, no fee is due.

In view of the above, it is respectfully submitted that the claims are now in condition for allowance, and favorable action thereon is earnestly solicited.

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Respectfully submitted,

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